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# U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE FOREST PRODUCTS LABORATORY MADISON, WIS.

*In Cooperation with the University of Wisconsin*

## LIST OF PUBLICATIONS ON WOOD PRESERVATION

U.S. DEPT. OF AGRICULTURE  
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This list includes publications that give general information and the results of research by the Forest Products Laboratory on wood preservation.

Single copies of the various items may be obtained free upon request from the Director, Forest Products Laboratory, Forest Service, U.S. Department of Agriculture, P.O. Box 5130, Madison, WI 53705. Classroom quantities are not available because of limited printing and storage facilities.

Title	:	Author	:	Publication and date
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### DETERIORATION

#### Decay and Durability

Leachability of pentachlorophenol from red oak.	:	Johnson, B. R., Gjovik, L. R., and Caulfield, D. F.	:	USDA Forest Serv. Res. Pap. FPL 266. 1975. :
Degradation of wood by products of metal corrosion.	:	Baker, A. J.	:	USDA Forest Serv. Res. Pap. FPL 229. 1974.
How anaerobic storage affects quality of Douglas-fir pulpwood chips.	:	Eslyn, W. E., and Laundrie, J. F.	:	Tappi 56(7):129-131. July 1973. :
Enzyme mixture improves creosote treatment of kiln-dried Rocky Mountain Douglas-fir.	:	Tschernitz, J. L.	:	Forest Prod. J. 23(3): 30-38. Mar. 1973. :
Effect of alkaline treatment on decay resistance of wood.	:	Highley, T. L.	:	Forest Prod. J. 23(1): 47-51. Jan. 1973.

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DETERIORATION--Cont.

Decay and Durability--Cont.

Is wood hardness affected by preservative treatment?	:	Ethington, R. L.	:	Forest Prod. J. 22(5): 60,61. May 1972.
Retentions by gage and assay: How do they compare?	:	Baechler, R. H.	:	Wood Preserv. 49(1): 6-12. Jan. 1971.
A need for modifying the soil-block method for testing natural resistance to white rot.	:	Highley, T. L., and Scheffer, T. C.	:	Mater. und Organismen 5(4):281-292. 1970.
Decay resistance of four wood species treated to destroy thiamine.	:	Highley, T. L.	:	Phytopathol. 60 (11): 1660, 1661. Nov. 1970.
Natural decay resistance of 30 Peruvian woods.	:	Highley, T. L., and Scheffer, T. C.	:	USDA Forest Serv. Res. Pap. FPL 143. 1970.
Assay zones for specifying preservative-treated Douglas-fir and southern pine timbers.	:	Baechler, R. H., Gjovik, L. R., and Roth, H. G.	:	Amer. Wood-Preserv. Assoc. Proc. vol. 65: 114-121. 1969.
Protecting stored logs and pulpwood in North America.	:	Scheffer, T. C.	:	Mater. und Organismen 4(3):167-199. 1969.
Condition of pine piling submerged 62 years in river water.	:	Scheffer, T. C., Wilkinson, T., and Duncan, C. G.	:	Wood Preserv. 47(1): 22-24. Jan. 1969.
Detection of petroleum oil diluents in coal tar creosote by thin-layer chromatography.	:	Moore, W. E., Effland, M. J., and Roth, H. G.	:	J. Chromatogr. 38 (1968):522-525. 1968.
Factors affecting permeability and pit aspiration in coniferous sapwood.	:	Comstock, G. L., and Côté, W. A., Jr.	:	Wood Sci. & Tech. 2 (1968):279-291. 1968.

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#### DETERIORATION--Cont.

##### Decay and Durability--Cont.

Effect of light on the rate of decay of three wood-destroying fungi.	:	Duncan, C. G.	:	Phytopathol. 57(10): 1121-1125. Oct. 1967.
Comparative decay resistance of heartwood of native species.	:	Forest Products Laboratory	:	U.S. Forest Serv. Res. Note FPL-0153. 1967.
Factors influencing decay of untreated wood.	:	Forest Products Laboratory	:	U.S. Forest Serv. Res. Note FPL-0154. 1967.
Preservative treatment of cooling tower slats.	:	Baechler, R. H., Bendtsen, B. A., and Roth, H. G.	:	Heating, Piping, & Air Cond.: 121-123. Apr. 1966.
Longitudinal permeability of green eastern hemlock.	:	Comstock, G. L.	:	Forest Prod. J. 15(10): 441-449. Oct. 1965.
Fungi associated with principal decays in wood products in the United States.	:	Duncan, C. G., and Lombard, F. F.	:	U.S. Forest Serv. Res. Pap. WO-4. Oct. 1965.

#### PRESERVATIVES

##### Application Methods

Experimental preservative treatment of three tropical hardwoods by double-diffusion processes.	:	Johnson, B. R., and Gonzalez, T. G. E.	:	Forest Prod. J. 26(1): 39-46. Jan. 1976.
Evaluation of five treatments to prevent deterioration of wood chips during storage in pile simulators.	:	Springer, E. L., Feist, W. C., Zoch, L. L., Jr., and Hajny, G. J.	:	Tappi 58(3):128-131. 1975.
In-place treatment of simulated waterfront structures for decay control.	:	Highley, T. L., and Scheffer, T. C.	:	Material und Organismen 10(1):57-66. 1975.

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Application Methods--Cont.

Evaluation of two chemical treatments in outside chip piles.	:	Springer, E. L., Feist, W. C., and Zoch, L. L., Jr.	:	USDA Forest Serv. Res. Pap. FPL 215. 1974. :
Storing wood chips at elevated temperatures--effect of alkali pretreatment.	:	Feist, W. C., Springer, E. L., and Hajny, G. J.	:	Tappi 57(8):112-114. 1974. :
Treatability of coast Douglas-fir Press-Lam.	:	Tschernitz, J. L., Miniutti, V. P., and Schaffer, E. L.	:	AWPA Proc. 1974 17 p. :
Attractant-mirex bait suppresses activity of <u>Reticulitermes</u> spp.	:	Esenther, G. R., and Beal, R. H. :	:	J. of Econ. Entomology 67(1):85-88. Feb. 1974.
Inorganic surface treatments for weather-resistant natural finishes.	:	Black, J. M., and Mraz, E. A. :	:	USDA Forest Serv. Res. Pap. FPL 232. 1974. :
Characterization of wood-preserving coal-tar creosote by gas-liquid chromatography.	:	Nestler, F.H.M. : :	:	Analyt. Chem. 46(1): 46-53. Jan. 1974. :
Effectiveness of groundline treatments of creosoted pine poles under tropical exposure.	:	Chudnoff, M., Gjovik, L. R., and Wawriw, R.	:	Forest Prod. J. 23(9): 80-84. Sept. 1973. :
New and effective chemical treatment to preserve stored wood chips.	:	Springer, E. L., Feist, W. C., Zoch, L. L., Jr., and Hajny, G. J.	:	Tappi 56(6):157. June 1973. : :
A treatment that shows promise for preserving stored wood chips.	:	Springer, E. L. Zoch, L. L., Jr., Feist, W. C., and Hajny, G. J.	:	USDA Forest Serv. Res. Pap. FPL 216. 1973. : :



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PRESERVATIVES--Cont.

Application Methods--Cont.

Evaluating chemicals for controlling biodeterioration of stored wood chips.	: Eslyn, W. E. : :	: Forest Prod. J. 23(11): : 21-25. Nov. 1973. :
Effectiveness of groundline treatments of creosoted pine poles under tropical exposure.	: Chudnoff, M., : Gjovik, L. R., and : Wawriw, R.	: Forest Prod. J. 23(9): : 80-84. Sept. 1973. :
New and effective chemical treatment to preserve stored wood chips.	: Springer, E. L., : Zoch, L. L., Jr., and : Hajny, G. J.	: Tappi 56(6):157. : June 1973. :
Propionic acid--a potential control for deterioration of wood chips stored in outside piles.	: Eslyn, W. E. : : :	: Tappi 56(4):152. : Apr. 1973. : :
Analyzing creosote by gas chromatography: Relationship to specifications.	: Lorenz, L. F., and : Gjovik, L. R. :	: Amer. Wood Preserv. : Assoc. Proc. vol. 68: : 32-39. 1972.
Treatment of Alaskan species by double-diffusion and modified double-diffusion methods.	: Gjovik, L. R., : Roth, H. G., and : Davidson, H. L. :	: USDA Forest Serv. Res. : Pap. FPL 182. 1972. : :
Dual treatment of marine piles: Predrying and treatment.	: Davidson, H. L., and : Gjovik, L. R. :	: Amer. Wood Preserv. : Assoc. Proc. vol. 68: : 162-167. 1972.
Treating resistant Rocky Mountain species by regular and modified double-diffusion methods.	: Markstrom, D. C., : Mueller, L. A., and : Gjovik, L. R. :	: Forest Prod. J. 20(12): : 17-20. Dec. 1970. : :
Vacuum treatment of lumber.	: Blew, J. O., : Panek, E., and : Roth, H. G.	: Forest Prod. J. 20(2): : 40-47. Feb. 1970. :

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PRESERVATIVES--Cont.

Application Methods--Cont.

Effect of <u>Trichoderma viride</u> and a contaminating bacterium on microstructure and permeability of loblolly pine and Douglas-fir.	:	Johnson, B. R., and Gjovik, L. R.	:	Amer. Wood Preserv. Assoc. Proc. vol. 66: 234-240. 1970.
Microscopic examination of pressure-treated wood.	:	Behr, E. A., Sachs, I. B., Kukachka, B. F., and Blew, J. O.	:	Forest Prod. J. 19(8): 31-40. Aug. 1969.
Retention and distribution of waterborne preservative in redwood treated at different moisture levels.	:	Blew, J. O., Roth, H. G., and Davidson, H. L.	:	Amer. Wood Preserv. Assoc. Proc. vol. 64: 203-209. 1968.
Longitudinal permeability of wood to gases and nonswelling liquids.	:	Comstock, G. L.	:	Forest Prod. J. 17(10): 41-46. Oct. 1967.
Hydrolysis of aspenwood xylan with aqueous solutions of hydrochloric acid.	:	Springer, E. L.	:	Tappi 49(3):102-106. Mar. 1966.
Preservative treatment of wood for farm use.	:	Blew, J. O.	:	U.S. Forest Serv. Res. Note FPL-085. 1965.

Evaluation of Properties

Reaction of alkylene oxides with wood.	:	Rowell, R. M.	:	In Chapter 8, Cellulose Tech. Res. Albin F. Turbak, editor. Symp., Cellulose, Paper, and Textile Division, 168th Annual Meeting, Amer. Chem. Soc., Atlantic City, N.J., p. 116-124. 1975.
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PRESERVATIVES--Cont.

Evaluation of Properties--Cont.

Comparison of wood preservatives in Mississippi post study (progress report).	:	Blew, J. O., and Davidson, H. L.	:	USDA Forest Serv. Res. Note FPL-01. 1975.
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Service records on treated and untreated fence posts.	:	Blew, J. O., and Kulp, J. W.	:	U.S. Forest Serv. Res. Note FPL-068. 1975.
The characterization of wood-preserving creosote by physical and chemical methods of analysis.	:	Nestler, F.H.M.	:	USDA Forest Serv. Res. Pap. FPL 195. 1974.
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Characterization of wood-preserving coal-tar creosote by gas-liquid chromatography.	:	Nestler, F.H.M.	:	Analyt. Chem. 46(1): 46-53. 1974.
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Evaluating chemicals for controlling biodeterioration of stored wood chips.	:	Eslyn, W. E.	:	Forest Prod. J. 23(11): 21-25. Nov. 1973.
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Comparison of wood preservatives in stake tests (progress report).	:	Blew, J. O.	:	USDA Forest Serv. Res. Note FPL-02. 1973.
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Interlaboratory testing of wood preservatives using ASTM D 1413-61.	:	Smith R. S., and Gjovik, L. R.	:	Wood and Fiber 4(3): 170-178. Fall 1972.
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Fifteen-year appraisal of dip treating for protecting exterior woodwork: Effectiveness on different wood species and in various climates.	:	Scheffer, T. C., Verrall, A. F., and Harvey, G.	:	Mater. und Organismen 6(1):27-44. 1971.
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Wood minesweepers are sound after 15 years of service.	:	Highley, T. L., Scheffer, T. C., and Selbo, M. L.	:	Forest Prod. J. 21(5): 46-48. May 1971.
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Preservative retentions and penetration in the treatment of white fir.	:	Blew, J. O., and Davidson, H. L.	:	Amer. Wood Preserv. Assoc. Proc. vol. 66: 204-219. 1971.
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Evaluation of Properties--Cont.

Marine tests on combination-treated round and sawed specimens.	:	Baechler, R. H., Gjovik, L. R., and Roth, H. G.	:	Amer. Wood Preserv. Assoc. Proc. vol. 66: 249-255. 1970.
A climate index for estimating potential for decay in wood structures above ground.	:	Scheffer, T. C.	:	Forest Prod. J. 21(10): 25-31. Oct. 1970.
Quantitative differences in preservative penetration and retention in summerwood and springwood of longleaf pine.	:	Gjovik, L. R., Roth, H. G., and Lorenz, L. F.	:	Amer. Wood Preserv. Assoc. Proc. vol. 66: 260-262. 1970.
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Relationship between permeability of green and dry eastern hemlock.	:	Comstock, G. L.	:	Forest Prod. J. 18(8): 20-23. Aug. 1968.
Field tests on wood dethiaminized for protection against decay.	:	Gjovik, L. R., and Baechler, R. H.	:	Forest Prod. J. 18(1): 25-27. Jan. 1968.
Study of paintability and cleanliness of wood pressure treated with water-repellent preservative.	:	Panek, E.	:	Amer. Wood Preserv. Assoc. Proc. vol. 64: 178-186. 1968.
Long-term effect of preservatives on gluelines in laminated beams.	:	Selbo, M. L.	:	Forest Prod. J. 17(5): 23-32. May 1967.
Preservative retention and distribution in several western conifers.	:	Blew, J. O., Roth, H. G., and Davidson, H. L.	:	Amer. Wood Preserv. Assoc. Proc. vol. 63: 30-43. 1967.

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## Evaluation of Properties--Cont.

Effects of various preservative treatments of field boxes on nail holding.	:	Scholten, J. A.	:	U.S. Forest Serv. Res. Pap. FPL 42. 1965.
Effects of wood preservatives on electrical moisture-meter readings.	:	Forest Products Laboratory	:	U.S. Forest Serv. Res. Note FPL-0106. 1965.
Results of soil-block tests on miscellaneous chemicals and materials.	:	Baechler, R. H.	:	Amer. Wood Preserv. Assoc. Proc. vol. 60: 182-189. 1964.

# PRODUCTS

## Lumber, Millwork, and Timbers

Winter treatments protect birch roundwood during storage.	:	Scheffer, T. C., and Eslyn, W. E.	:	Forest Prod. J. 26(1): 27-31. Jan. 1976.
Single- and dual-treated panels in a semi-tropical harbor: Preservative and retention variables and performance.	:	Johnson, B. R., Gjovik, L. R., and Roth, H. G.	:	Amer. Wood Preserv. Assoc. Proc. vol. 69: 207-215. 1973.
Experiments with a combination of two plastics for filling tree cavities.	:	May, C., and Palmer, J. G.	:	Arborist's News 33(12): 1-4. 1968.
Retention and distribution of creosote in redwood lumber treated at three levels of moisture content.	:	Blew, J. O., and Roth, H. G.	:	Amer. Wood Preserv. Assoc. Proc. vol. 61: 16-20. 1965.

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<u>PRODUCTS--Cont.</u>		
<u>Posts, Poles, and Piling</u>		
Comparison of wood preservatives in stake tests (1975 progress report).	: Gjovik, L. R., and : Davidson, H. L. :	: USDA Forest Serv. Res. : Note FPL-02. 1975. :
Comparison of wood preservatives in Mississippi post study (1975 progress report).	: Gjovik, L. R., and : Davidson, H. L. : :	: USDA Forest Serv. Res. : Note FPL-01. 1975. : :
Service records on treated and untreated fenceposts.	: Gjovik, L. R., and : Davidson, H. L. :	: USDA Forest Serv. Res. : Note FPL-068. Rev. : 1975.
Evaluation of chemicals for preserving wood chips using pile simulators.	: Springer, E. L., : Feist, W. C., : Zoch, L. L., Jr., and : Hajny, G. J.	: Tappi 56(6):125-128 : June 1973. : :
Comparison of wood preservatives in Mississippi post study (1973 progress report).	: Gjovik, L. R., and : Davidson, H. L. : :	: USDA Forest Serv. Res. : Note FPL-01. 1973. : :
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Utility pole decay. Part II: Basidiomycetes associated with decay in poles.	: Eslyn, W. E. : :	: Wood Sci. & Tech. : 4(1970):97-103. 1970. :
Pole groundline preservative treatments evaluated.	: Blew, J. O. : :	: Transmission & : Distribution. Aug. : 1970.
Studies of several methods for determining suitability of creosote for marine use.	: Baechler, R. H., : Gjovik, L. R., and : Roth, H. G.	: Amer. Wood Preserv. : Assoc. Proc. vol. 65: : 16-27. 1969.

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PRODUCTS--Cont.

Posts, Poles, and Piling--Cont.

Further thoughts regarding variable performance of creosoted marine piling.	:	Baechler, R. H.	:	Amer. Wood Preserv. Assoc. Proc. vol. 64: 117-126. 1968.
Utility pole decay. Part I: Appraisal of a device for nondestructive detection of decay.	:	Eslyn, W. E.	:	Wood Sci. & Tech. 2(1968):128-137. 1968.
Determination of residual creosote in disks from fender piling after 30 years' service in San Francisco-Oakland Bay bridge.	:	Baechler, R. H., & Alpen, R. M.	:	Amer. Wood Preserv. Assoc. Proc. vol. 61: 256-260. 1965.
Extraction of borings removed from fender piles in San Francisco-Oakland Bay bridge.	:	Baechler, R. H., and Alpen, R. M.	:	Amer. Wood Preserv. Assoc. Proc. vol. 60: 32-67. 1964.

GENERAL LITERATURE ON WOOD PRESERVATION

Some companies that design or build wood-preserving plants.	:	Forest Products Laboratory	:	FPL 75-013. 1975.
Treated wood foundations for buildings	:	Gjovik, L. R., and Baechler, R. H.	:	Forest Prod. J. 20(5): 45-48. May 1970.
Preservative treatments for protecting wood boxes.	:	Verrall, A. F., and Scheffer, T. C.	:	USDA Forest Serv. Res. Pap. FPL 106. 1969.

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